NPDES permit No. WA 000079-5
Issuance Date: July 3, 1991
Expiration Date: July 3, 1996
Amendment # 1 Date: June 10, 1992
Amendment # 2 Date: June 24, 1994

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
WASTE DISCHARGE PERMIT

State of Washington
Department of Ecology
Olympia, Washington 98504

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1251 et seq.

Rayonier, Inc.
Port Angeles Pulp Mill
700 North Ennis
Port Angeles, Washington 98362

Plant Location	Receiving Water
Port Angeles, Washington	Strait of Juan de Fuca and Port Angeles Harbor
Industry Type	**Discharge Location**
Dissolving Sulfite Pulp Mill	Strait of Juan de Fuca 48N 07' 28" N. Latitude 123W 22' 45" W. Longitude
	Waterway Segment Number
	09-18-076 and 09-18-15

The above-named corporation is authorized to discharge at the location described in accordance with the special and general conditions contained herein.

Michael F. Palko
Supervisor
Industrial Section
Department of Ecology

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I. SUMMARY OF SCHEDULED ACTIVITIES AND REPORTS SUBMITTALS SCHEDULE

	TASKS	DATE
1.	Submit discharge monitoring report	Monthly
2.	Twelve Month Pollutants of Interest study	Due by October 1, 1993
3.	Conduct and submit report on salmonid bioassay	Semiannually
4.	Update and submit spill control Plan	Within six months of permit issuance; annual update
5a.	Submit stormwater runoff discharge sampling plan	Within six months of permit issuance
5b.	Conduct stormwater runoff study	Within four months after approval of 5a.
5c.	Submit stormwater runoff study	Within six months of study initiation 5b.
6.	Update and submit solid waste plan	With permit application
7.	Update and submit treatment system operating plan	Within six months of permit issuance
8a.	Conduct chemical analysis of influent and effluent	Within second year of permit terms
8b.	Submit report of results of chemical analysis of influent and effluent	Within four months of initial sampling in 8a.
9a.	Conduct particulate monitoring study	Upon written notification
9b.	Submit report on results of particulate monitoring study	Within nine months of written notification in 9a.
10.	Submit slimicide usage report	Annually
11.	Best Management Practices	Beginning with permit issuance

SUMMARY OF SCHEDULED ACTIVITIES AND REPORTS SUBMITTALS SCHEDULE (Continues)

	TASKS	DATE
12.	Achieve compliance with interim discharge limitation	By June 28, 1994
13.	Monitoring program	
13a.	TCCD of Effluent	Quarterly
13b.	TCDF of Effluent	Quarterly
13c.	AOX of Effluent	Weekly
13d.	TCDD of Sludge	Quarterly
13e.	TCDF of Sludge	Quarterly
14a.	Submit a bioaccumulation sampling and testing plan	Within the third year of permit term
14b.	Monitor for dioxin bioaccumulation	Within fourth year of permit term
14c.	Submit a bioaccumulation report	180 days before permit expiration
15a.	Conduct quarterly chronic bioassays for one year	Within three months of permit modification
15b.	Report interim chronic bioassay results	Within two months of each sampling interval
15c.	Conduct chronic toxicity testing	Four time during third year of permit

II. WATER QUALITY STANDARDS

The Permittee's discharge at the edge of the dilution zone shall not exceed the water quality criteria for marine chronic levels, as referenced in the State Water Quality Standards, WAC 173-201, or updated versions thereof.

III. MILL CONFIGURATION

On the issue date of this permit, the Permittee operates a dissolving sulfite pulp mill producing acetate, cellophane, and viscose grade pulp.

IV. BASIS FOR EFFLUENT LIMITATIONS

The permit five day biochemical oxygen demand, BOD-5, limitations for acetate grade pulp were determined by Best Engineering Judgement. The effluent limitations for all other conventional pollutants are based on the "Effluent Guidelines and Standards" published in the Federal Regulations, 40 CFR part 430, Subpart K, Dissolving Sulfite Pulp Subcategories, July 1, 1989, (i.e., 40 CFR part 430.110-114. If federal effluent acetate grade pulp guidelines are promulgated for BOD-5, the permit may be reopen and modified to reflect the new effluent guidelines. Any such modifications shall be subject to appeal to the Pollution Control Hearing Board in the manner provided by law.

V. SPECIAL CONDITIONS

S1. EFFLUENT LIMITATIONS and MONITORING REQUIREMENTS

A. From the issuance date of this permit the permittee is authorized to discharge from outfall 001 subject to the following limits:

	Daily Average(1)	Daily Maximum(1)	Monitoring Frequency	Monitoring Sample Type
BOD-5	32,700 lbs/day	62,800 lbs/day	Daily	24 hr Composite Refrigerated Sample
TSS(2)	40,300 lbs/day	74,800 lbs/day	Daily	24 hr Composite
pH(3)	5.0 to 9.0		Continuous	Continuous
Flow	----------	----------	Continuous	Continuous
Production	----------	----------	Daily	Total air dried ton off-the-machine

Absorbable organic halogens, AOX (See special condition S9)

Dioxin and furan, TCDD and TCDF (See special condition S9)

(1) The daily average is the average of daily values obtained over a calendar month's time. The daily maximum is defined as the greatest value for any one day. Total suspended solids and biochemical oxygen demand are abbreviated as TSS and BOD-5, respectively.

(2) For determining compliance with the effluent limitations for total suspended solids (TSS), the following formula

shall be used provided that the monthly average of the final secondary effluent TSS is always greater than the monthly average TSS as calculated by this formula:

TSS = Final Effluent TSS - PTS - FS
Where:

PTS (Pass-through-solids) = 8.33 x (raw water TSS (mg/L)) x (pass-through-raw water flow (MGD))

FS (Filtered Solids) = 8.33 x (settling basin effluent TSS (mg/L)) x (filter plant flow (MGD))

The above parameters shall be measured and reported monthly with the calculated values required in Special Condition S1.A.

Any process solids discharged to the uncontaminated sewer which exceeds 1,000 pounds per day and are measured as volatile suspended solids shall be reported as spills.

(3) The range of pH from 5.0 to 9.0 indicates the permitted values. Excursions between 4.0 and 10.0 shall be allowed provided no single excursion exceeds 60 minutes in length and the total excursions do not exceed 7 hours and 26 minutes per month. Any excursions below 4.0 or above 10.0 for more than 15 minutes shall be considered violations. The instantaneous maximum and minimum pH shall be reported monthly.

B. The Permittee shall certify to Ecology that chlorophenolic compounds are not used.

C. The Permittee shall certify to the Ecology that zinc hydrosulfite is not used as a bleaching agent.

D. From the date of this permit, the permittee is authorized to discharge the filter plant backwash solids into the Strait of Juan de Fuca via Outfall 001.

E. From the date of this permit, the permittee is authorized to discharge stormwater from outfalls 002 and 003.

F. The permittee shall perform the following twelve month study:

1. Monitor total recoverable copper weekly;

2. Determine the source(s) within the pulp and paper mill where the chemical is generated or introduced into the

water train;

3. Determine the method(s) to eliminate and/or reduce the concentration of the chemical to a value below the acute and chronic water quality value listed in Chapter 173.201 WAC through process control or treatment; and,

4. Submit a report to Ecology detailing the results of this twelve month study by October 1, 1993.

If the results of the study indicate that the concentration of copper exceeds the marine criteria in the state water quality standards (WAC 173-201-047) after using the initial dilution ratio, Ecology may modify the permit to established effluent limitations for those chemicals that do not meet the acute water quality criteria. Such modification shall be subject to appeal to the Pollution Control Hearing Board in the manner provided by law.

G. No discharge shall produce a visible oil sheen on the receiving water.

S2. STORMWATER REPORT, MONITORING, AND LIMITS

The permittee shall develop a sampling program to assess pollutants in their stormwater runoff discharges which are not routed to the wastewater treatment systems. The program shall include sampling locations, sampling time schedules, and pollutants to be analyzed (including settleable solids and oil and grease). The permittee shall distinguish those areas directly associated with industrial activities from other areas such as parking lots. The locations of stormwater discharges and maximum expected quantities shall be shown on a topographic map. The sampling plan shall be submitted to Ecology for approval within six months of the issuance date of this permit. The stormwater sampling study shall be initiated within 120 days following Ecology approval of the plan. A written report on the stormwater study results shall be submitted within six months of the initiation of the study. Based upon the results of this study, Ecology may move to amend the permit or issue administrative orders to establish new permit limitations or best management practices. Any such permit amendment or administrative orders shall be subject to appeal to the Pollution Control Hearing Board in the manner provided by law.

S3. MONITORING AND REPORTING REQUIREMENTS

A. REPRESENTATIVE SAMPLES

Samples and measurements taken to meet the requirements of this permit shall be representative of the volume and nature of the discharge.

B. TEST PROCEDURES

All samples and analytical methods used to meet the above requirements shall, unless otherwise approved by Ecology, conform to the Guidelines Establishing Test Procedures for the Analysis of Pollutants, contained in 40 CFR Part 136.

C. RECORDING OF RESULTS

For each measurement or sample taken, the Permittee shall record the following information: (1) the date, place, and time of sampling; (2) the date of analysis; (3) name of the analyst; (4) the technique or method used; and, (5) the results of the analysis.

D. RECORDS RETENTION

The Permittee shall retain on site for a minimum of three years all records of monitoring and test results, including all reports and instrument recordings. This period of retention may be extended by Ecology.

E. REPORTING

Monitoring results obtained during a month shall be summarized and reported on the Discharge Monitoring Report Form (EPA No. 3320-1). In addition, a table shall be submitted which lists the following information; the day of the month, flow (MGD), BOD-5 (lb/day), TSS (lb/day), and pH (maximum and minimum) in accordance with the monitoring requirements specified in Special Condition S1.

A report, including the Discharge Monitoring Report form and the table previously described, shall be mailed no later than 15 days after the end of each month to Ecology. The discharge monitoring report forms shall be mailed to:

Department of Ecology
Industrial Section
Post Office Box 47706
Olympia, WA 98504-7706

S4. SOLID WASTE DISPOSAL

This permit condition is based on state law not federal NPDES program regulations. The Permittee shall perform the following items:

1. Handle and dispose of all solid waste materials that prevents its entry into the ground or surface waters of the state.
2. Apply for a permit or permit modification as may be required for such discharges.
3. Submit a revised solid waste control plan within six months of

the issue date of this permit for review and approval by Ecology.

4. Comply with the plan as approved by Ecology.
5. Submit an update of the plan with the application for permit renewal 180 days prior to the expiration date of the permit.

The permittee shall not permit leachate from its solid waste material to enter state waters without providing all known, available, and reasonable methods of treatment nor allow such leachate to cause any adverse effect on state ground or surface waters.

The plan shall include the following:

1. All wastes except those covered by Chapter 173-303 WAC (Dangerous Waste Regulations).
2. The State/EPA identification number, if wastes subject to Chapter 173-303 WAC are generated.
3. A description, source, generation rate, and disposal method(s) for these solid wastes except dangerous wastes.
4. Proposed changes in the disposal practices. These changes shall be submitted to Ecology for review and approval.

The plan shall not be at variance with any approved local solid waste plan.

S5. TREATMENT SYSTEM OPERATING PLAN

All wastewater treatment systems shall be operated according to procedures and criteria described in an approved operating plan. The Permittee shall review and update their current Treatment System Operating Plan, and submit the updated plan within six months of the issuance date of this permit. The Treatment System Operating Plan shall be followed throughout the term of this permit.

The updated plan shall include, but is not limited to, the following:

1. A baseline operating condition which describes the operating parameters and procedures used to meet the limitations of Section S1 at the production levels used in developing these limitations.
2. A description of the operating procedures and conditions needed to maintain design treatment efficiency in the event of production levels which are below the baseline levels used to establish the limitation of permit conditions S1.
3. A description of the operating procedures and conditions employed to control or mitigate upset conditions such as high solids loading from plant maintenance activities or severe stormwater event.
4. A description of the monitoring and reporting method to be used.

The Permittee shall operate the treatment system to meet its design efficiency at lower production levels.

S6. OTHER REQUIREMENTS

A. SALMONID BIOASSAY

The permittee's wastewater treatment plant effluent from the pulp mill discharge shall allow an 80 percent survival of the salmonid test fishes in a minimum of 65 percent effluent from the pulp mill wastewater treatment plant for a 96-hour period. These tests shall be conducted by the Permittee semiannually using techniques conforming to protocols as specified below, or an approved equivalent method. A portion of the bioassay sample shall be preserved (refrigerated in the dark) for later chemical analysis should the bioassay fail.

Whenever process or treatment changes cause a change in effluent composition, or a routine semiannual bioassay test fails, the bioassay test shall be conducted once a month for three consecutive months. All three of these tests must be passed before the Permittee may revert back to the semiannual schedule. The Permittee shall notify Ecology if additional testing is to be conducted.

Ecology may require more frequent testing if routine monitoring shows a significant increase for any of the parameters listed in Permit Condition S1, Effluent Limitations and Monitoring Requirements.

The bioassays tests shall be conducted in accordance with the following protocols: "Biological Testing Methods; Part A, Static Acute Fish Toxicity Test," DOE 80-12, 1991 or latest revision thereof.

B. TEMPERATURE CRITERIA

The receiving water quality immediately outside the Permittee's dilution zone shall not exceed the following temperature criteria:

No measurable increase (0.3 degrees Centigrade) shall be permitted which results in water temperatures exceeding 13 degrees Centigrade, nor shall an increase arising from the Permittee's discharge be permitted in excess of "t." For purposes hereof, "t" is equal to (8/(T-4)), where "T" represents the resulting water temperature in degrees Centigrade.

When natural conditions exceed 13 degrees Centigrade, no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3 degrees Centigrade.

C. SPILL CONTROL

The Permittee shall annually update the existing Spill Control Plan, subject to approval by Ecology, for the prevention, containment, and control of spills, or unplanned discharges of oil and petroleum products and materials, which when spilled or otherwise released into the environment, are designated Dangerous Waste (DW) or Extremely Hazardous Waste (EHW) by the procedures set forth in WAC 173-303-070.

The Spill Control Plan shall include the following:

1. A description of the reporting system which will be used to alert responsible managers and legal authorities in event of a spill.
2. A description of the preventive measures and facilities including an overall facility plot showing drainage patterns which prevent, contain, or treat spills of these materials.
3. A list of all oil and chemicals used, processed, or stored at the facility which may be spilled into state waters.
4. The requirements of 40 CFR Part 112.
5. For purposes of this requirement, plans and manuals required by 40 CFR Part 112 and the contingency plan/emergency procedures of WAC 173-303-350 and 360, may be included.

An updated Spill Control Plan shall be submitted for Ecology's review and approval within six months and annually thereafter of the issuance date of this permit. The Spill Control Plan and supplement shall be followed throughout the term of this permit.

D. SLIME CONTROL REPORT

In-plant slime control methods and materials shall be reported in detail annually, giving the description, amount, and periods of application for each slimicide used. Any deviation from the reported ranges of quantities used shall be reported when practicable.

E. OIL AND HAZARDOUS SUBSTANCE LIABILITIES

Nothing in this permit shall be construed to preclude the institution of any legal action, or relieve the Permittee from any liabilities, or penalties, to which the permittee may be subject under Section 311 of the Federal Clean Water Act.

F. FLOW MEASUREMENT

Appropriate flow measurement devices and methods consistent with the accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurement of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements are consistent with the accepted industry standards for those types of devices. Frequency of calibration shall conform to the manufacture's recommendations or at a minimum frequency of at least one calibration per year.

S7. SPECIAL STUDIES

A1. DELETED

A2. CHRONIC BIOMONITORING STUDY

The Permittee shall participate in a marine biomonitoring precision study. This precision study will be designed to determine and compare the variability of chronic whole effluent toxicity tests for a minimum of four Pacific Northwest marine organisms, one of which will be the Pacific Oyster larvae. It is anticipated that other pulp and paper mills will participate in this precision study. Pending completion of the study, the Permittee shall comply with the interim monitoring requirements set forth below. During the conduct of the marine biomonitoring precision study, the Permittee will conduct two oyster larvae bioassay studies on its effluent during the natural spawning season (June through August). Each test shall measure the response of the organisms to a series of dilutions around the expected dilutions at the edge of the mixing zone set forth herein. The protocols and precise testing methods shall be determined in accordance with the scope of work for the precision study. Results of these tests shall be submitted to the Department within two months of the sampling date.

A scope of work document covering the process by which the marine biomonitoring precision study will be organized and undertaken has been approved by the Department (see Attachment A). If the precision study or interim milestone events within the study are not completed within the time schedules set by the approved scope of work (including any approved extensions or modifications thereto), or if upon completion of the precision study no marine chronic toxicity test is recommended for future use, the Department in that event may modify the terms of this permit to require additional chronic biomonitoring. Any modification of the permit pursuant to this paragraph is appealable to the Pollution Control Hearings Board in the manner provided by law.

In the event one or more tests is recommended at the conclusion of

the marine biomonitoring precision study, but no later than 26 months from the date of the modification date of this permit, the Department shall select no more than two species from those recommended as a result of the precision study. The Permittee shall conduct chronic toxicity testing of those species selected by the Department four times during the third year of this permit, using protocols and methods specified by the Department.

The Permittee agrees not to challenge the precision of any chronic toxicity test selected by the Department for biomonitoring purposes following recommendation as a result of the precision study, provided, however, the Permittee shall not be limited in exercising any right to challenge the Department's subsequent regulatory application of a selected toxicity test as an effluent limit, or in some other application, where the demonstrated variability of the test materially affects that application. It is understood that the Department, notwithstanding its participation in the marine biomonitoring precision study, retains any ability it has by law to respond to any evidence of toxicity caused by the Permittee's effluent, even if this evidence is obtained prior to, or during, or as a result of the study.

a. INTERIM MONITORING REQUIREMENTS

Chronic toxicity testing of effluent shall be conducted quarterly for one year in accordance with protocols, monitoring requirement, and QA/QC procedures specified below.

Testing shall be conducted using two organisms: (1) Ceriodaphnia dubia, (2) the fathead minnow. All tests shall measure the response of the organisms in a series of dilutions (0, 6.25, 12.5, 25, 50 and 100 percent effluent concentrations, or another approved dilution series) to determine the IC25 (inhibition concentration - 25%) and the no observed effect concentration (NOEC).

The testing shall begin within three (3) months of the modification of the permit. A written report of the toxicity test results shall be submitted to the Department within two (2) months after each sampling interval.

Each written report submitted to the Department shall include all relevant information outlined in Section 10, Report Preparation, of Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, EPA/600/4-87/028, May 1988. The report shall also identify the most sensitive species and specify the IC25 and the NOEC.

b. PROTOCOLS

The interim monitoring shall be conducted in accord with the following protocols or approved modifications thereof:

Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA/600/4-89/001.

Annual Book of ASTM Standards, Section 11, Water and Environmental Technology, Volume 11.04 Biological Effects and Environmental Fate.

c. QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

The Permittee shall follow the quality assurance procedures discussed in the protocols cited in this section or approved modifications of those protocols. Test results which are not considered valid (e.g., excessive control mortality or inadequate control response) will not be accepted by the Department and the test(s) shall be repeated.

A3. CHEMICAL ANALYSIS OF INFLUENT AND EFFLUENT

The Permittee shall conduct chemical analyses of influent and effluent samples collected from their wastewater treatment system in accordance with the protocols, study requirements, and QA/QC procedures specified below.

Influent and effluent samples shall be analyzed for pH, conductivity, hardness, TSS, BOD-5, and total recoverable metals, in the second year of the permit. The samples must be taken to coincide with one of the interim biomonitoring samples. A written report shall be submitted to the Department within 120 days after initial sampling.

The chemical analyses of the influent and effluent shall conform with the following protocols:

a. PROTOCOLS

Sample analysis shall be conducted in accordance with 40 CFR 136 and/or Standard Methods for the Examination of Water and Wastewater, Seventeenth Edition, 1989, or updated versions thereof.

b. MONITORING REQUIREMENTS

(i.) The following samples shall be collected for analyses: 1) influent to wastewater treatment -two samples, with

sampling times at least one week apart; and 2) effluent from wastewater treatment - two samples, collected at such times that results, in conjunction with influent analyses results, may be used to estimate constituent removal efficiencies across the treatment system.

(ii.) Each sample of the influent and effluent shall be a representative composite consisting of continuous sampling or six grab samples equally spaced over a 24-hour period.

c. QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

The Permittee shall follow the quality assurance procedures in 40 CFR 136 and/or Standard Methods for the Examination of Water and Wastewater, Seventeenth Edition, 1989.

B. DELETED

C. PARTICULATE MONITORING STUDY

The Permittee shall be required to analyze samples of the particulate fraction of the effluent from Outfall 001 after Departmental guidelines and protocols have been established. The Department will notify the permittee in writing when the guidelines are established. At that time, the permittee shall collect and analyze particulate samples for the pollutants specified by the Department, and submit the results to the Department within nine months of the date of written notification.

The sampling referred to in this condition shall be specified in a permit modification or administrative order, and shall be subject to appeal to the Pollution Control Hearings Board in the manner provided by law.

S8. MIXING ZONE AND THE ACUTE CRITERIA COMPLIANCE BOUNDARY

The mixing zones for outfall 001 shall not extend in any horizontal direction from the discharge ports for a distance greater than 355 feet.

The zone where acute criteria may be exceeded for outfall 001 shall be not be greater than 36 feet from any discharge port.

S9. DIOXIN (TCDD) CONTROL PROGRAM

A. BEST MANAGEMENT PRACTICES

The permittee shall, upon the reissuance of the permit, continue to take the following actions to reduce the production and the discharge of dioxin at its facility to the extent that such actions are consistent with existing bleach plant configuration.

a. Eliminate the use of brown stock defoamers which contain recycled oils in the pulp to be bleached.

b. Minimize the use of defoamers and other chemicals which contain dioxin precursors in the pulp to be bleached.

c. Optimize chlorine dioxide substitution to the extent allowed by on-site chlorine dioxide generating equipment and the grade of pulp produced.

d. Minimize chlorine usage.

e. Reduce the discharge of suspended solids from the final effluent consistent with the Treatment System Operating Plan (TSOP) for the Mill.

B. PERMIT LIMITATION

Achieve compliance with the following dioxin discharge limit no later than June 28, 1994.

Parameter	Limitation
TCDD[1/]	Daily Maximum[2/] 1.9 milligrams/day

1/ TCDD is defined as 2,3,7,8-tetrachlorodibenzo-p-dioxin and is analyzed per the EPA Method 1613: Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution; or the NCASI Procedures for the Preparation and Isomer Specific Analysis of Pulp and Paper Industry Samples for 2,3,7,8-TCDD and 2,3,7,8-TCDF: Technical Bulletin No. 551; or an approved equivalent method.

2/ For compliance with the daily maximum dioxin discharge limit, the point of compliance is defined as the final effluent.

Compliance with the permit limit shall be demonstrated by determining the 2378-TCDD concentration in the final effluent.

The TCDD sample is defined as a 24-hour composite "final effluent" sample.

Compliance with the mass loading TCDD daily maximum limit shall be demonstrated if the sample TCDD concentration is 14 parts per quadrillion (ppq) or less, or non-detect at a detection limit of 10 ppq or less.

In the event that the sample is non-detect at a detection limit greater than 10 ppq, the permittee shall re-initiate a second round of sample collection and analyze for permit compliance. The original sample shall be discarded.

A technology-based interim dioxin effluent limit of 14 ppq is hereby established for the Mill, which is based upon the result achieved by the ash handling system. Ecology has made a preliminary determination that this limit is sufficient to meet the water quality standard of 2378-TCDD established by the National Toxics Rule. Ecology reserves the right to modify the 14 ppq effluent limit established pursuant to this permit reissuance. Rayonier Inc. reserves the right to appeal any such modification.

C. MONITORING PROGRAM

The permittee shall, upon the reissuance of the permit, conduct an effluent and sludge monitoring program in accordance with the following requirements:

Parameters	Frequency[3/]	Sample Type[4/]
Effluent		
TCDD	Quarterly	24-hour composite
TCDF[5/]	Quarterly	24-hour composite
AOX[6/]	Weekly	24-hour composite
Sludge[7/]		
TCDD	Quarterly	grab
TCDF	Quarterly	grab

3/ The sludge samples shall be taken at the same time as the effluent samples. Sampling for AOX shall also coincide with that for TCDD and TCDF samples.

4/ Sampling of TCDD and TCDF shall be conducted according to Appendix B of the USEPA/Paper Industry Cooperative Dioxin Screening Study (EPA 440/1-88-025, March 1988). The TCDD/TCDF sample

5/ TCDF is defined as 2,3,7,8-tetrachlorodibenzofuran and is analyzed per the EPA Method 1613: Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope Dilution; or the NCASI Procedures for the Preparation and Isomer Specific Analysis of Pulp and Paper Industry Samples for 2,3,7,8-TCDD and 2,3,7,8-TCDF: Technical Bulletin No. 551; or an approved equivalent method.

6/ AOX is defined as adsorbable organic halogens. The analytical method to be used is the SCAN-W 9:89 protocol described by the Scandinavian Pulp, Paper, and Board Testing Committee, the "International Organization for Standardization" (ISO/DIS 9562), Standard Methods, Method 506 (16th Edition Standard Methods for the Examination of Water and Wastewater), or USEPA method 1650.

When the EPA formally promulgates its method for AOX analysis in the Federal Register, that method shall be used from that time forward. Both the suspended and the dissolved fractions of the waste water shall be included in the analysis.

AOX values shall be reported as kilograms of AOX per air dried metric ton of brownstock to the bleach plant (kg/ADMT).

7/ Sludge is defined as the primary/secondary treatment sludge.

D. BIOACCUMULATION MONITORING

The Permittee shall test for dioxin in year four of the permit and submit the data 180 days before the expiration of the permit. The data will be used to assess the impact of the individual discharge and the suitability of the current allocation process. The testing shall conform to the following requirements:

1. Species - (freshwater) Walleye, Yellow Perch, Black Bass, Sturgeon, Catfish, Brown Bullhead, and Carp. (saltwater) Starry Flounder, Sanddab, Mussels, and Crab.

2. Sample Number - Four (4) samples shall be collected. Three (3) samples shall be taken in an area directly influenced by the discharge. One (1) sample shall be from an area outside the area of immediate influence.

3. Sample Type - Each sample will be a composite of three (3) to six (6) individuals. The fish samples will be whole gutted fish. The mussels and crab will be soft tissue.

4. Sample Analysis - The samples shall be analyzed for TCDD, TCDF, and lipid content.

5. Sample Locations - Ecology will notify the permittee of sample locations after examining the data from the dilution zone study to be performed under the agreed order and other pertinent information.

6. Sampling Plan - Within three (3) years of the issuance of this permit, the permittee shall submit a bioaccumulation sampling and testing plan to Ecology for approval.

7. Analytical Protocol - The analysis shall be conducted by the EPA Method 1613: Tetra- through Octa- Chlorinated Dioxin and Furans by Isotope Dilution, or an Ecology approved equivalent.

For the purposes of compliance with this condition, Ecology will consider a demonstration of no dioxin bioaccumulation (or acceptable levels of bioaccumulation) using mussels in experimental flow-through channels containing a mix of effluent and receiving water (ASTM E1022-84(1988)).

S10. DELETED

VI. GENERAL CONDITIONS

G1. DISCHARGE VIOLATIONS

All discharges and activities authorized by this permit shall be consistent with the terms and conditions of this permit. The discharge of any pollutant more frequently than, or at a level in excess of, that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

G2. PROPER OPERATION AND MAINTENANCE

The Permittee shall at all times properly operate and maintain all facilities and systems of collection, treatment, and control (and related appurtenances) which are installed or used by the Permittee for pollution control.

G3. REDUCE PRODUCTION FOR COMPLIANCE

The Permittee, in order to maintain compliance with its permit, shall control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

G4. NONCOMPLIANCE NOTIFICATION

If, for any reason, the Permittee does not comply with, or will be unable to comply with, any of the discharge limitations or other conditions specified in this permit, the Permittee shall, at a minimum, provide Ecology with the following information:

A. A description of the nature and cause of noncompliance, including the quantity and quality of any unauthorized waste discharges;

B. The period of noncompliance, including exact dates and times and/or the anticipated time when the Permittee will return to compliance; and

C. The steps taken, or to be taken, to reduce, eliminate, and prevent recurrence of the noncompliance.

In addition, the Permittee shall take immediate action to stop, contain, and cleanup any unauthorized discharges and take all reasonable steps to minimize any adverse impacts to waters of the state and correct the problem. The Permittee shall notify Ecology

immediately by telephone so that an investigation can be made to evaluate any resulting impacts and the corrective actions taken to determine if additional action should be taken.

In the case of any discharge subject to any applicable toxic pollutant effluent standard under Section 307(a) of the Clean Water Act, or which could constitute a threat to human health, welfare, or the environment, 40 CFR Part 122 requires that the information specified in items G4.A., G4.B., and G4.C., above, shall be provided not later than 24 hours from the time the Permittee becomes aware of the circumstances.

If this information is provided orally, a written submission covering these points shall be provided within five days of the time the Permittee becomes aware of the circumstances, unless Ecology waives or extends this requirement on a case-by-case basis.

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the conditions of this permit or the resulting liability for failure to comply.

G5. BYPASS PROHIBITED

The intentional bypass of wastes from all or any portion of a treatment works prohibited unless the following four conditions are met:

A. Bypass is: (1) unavoidable to prevent loss of life, personal injury, or severe property damage; or (2) necessary to perform construction or maintenance related activities essential to meet the requirements of the Clean Water Act and authorized by administrative order;

B. There are no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, maintenance during normal periods of equipment down time, or temporary reduction or termination of production;

C. The Permittee submits notice of an unanticipated bypass to Ecology in accordance with Condition G4. Where the Permittee knows or should have known in advance of the need for a bypass, this prior notification shall be submitted for approval to Ecology, if possible, at least 30 days before the date of bypass (or longer if specified in the special conditions);

D. The bypass is allowed under conditions determined to be necessary by Ecology to minimize any adverse effects. The public shall be notified and given an opportunity to comment

on bypass incidents of significant duration, to the extent feasible.

"Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

After consideration of the factors above and the adverse effects of the proposed bypass, Ecology will approve or deny the request. Approval of a request to bypass will be by administrative order under RCW 90.48.120.

G6. RIGHT OF ENTRY

The Permittee shall allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

A. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit;

B. To have access to and copy at reasonable times any records that must be kept under the terms and conditions of this permit;

C. To inspect at reasonable times any monitoring equipment or method required in this permit;

D. To inspect at reasonable times any collection, treatment, pollution management, or discharge facilities; and

E. To sample at reasonable times any discharge of pollutants.

G7. PERMIT MODIFICATIONS

The Permittee shall submit a new application or supplement to the previous application where facility expansions, production increases, or process modifications will (1) result in new or substantially increased discharges of pollutants or a change in the nature of the discharge of pollutants, or (2) violate the terms and conditions of this permit.

G8. PERMIT MODIFIED OR REVOKED

After notice and opportunity for public hearing, this permit may be modified, terminated, or revoked during its term for cause as follows:

A. Violation of any terms or conditions of this permit;

B. Failure of the Permittee to disclose fully all relevant facts or misrepresentations of any relevant facts by the Permittee during the permit issuance process;

C. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by this permit;

D. Information indicating that the permitted discharge poses a threat to human health or welfare;

E. A change in ownership or control of the source; or

F. Other causes listed in 40 CFR Parts 122.62 and 122.63.

Permit modification, revocation and reissuance, or termination may be initiated by Ecology or requested by any interested person.

G9. REPORTING A CAUSE FOR MODIFICATION

A Permittee who knows or has reason to believe that any activity has occurred or will occur which would constitute cause for modification or revocation and reissuance under "General Condition G8" or 40 CFR Part 122.62, must report such plans, or such information to Ecology so that a decision can be made on whether action to modify or revoke and reissue a permit is required. Ecology may then require submission of a new application. Submission of such application does not relieve the discharger of the duty to comply with the existing permit until it is modified or reissued.

G10. TOXIC POLLUTANTS

If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act for a toxic pollutant and that standard or prohibition is more stringent than any limitation upon such pollutant in this permit, Ecology shall institute proceedings to modify or revoke and reissue this permit to conform to the toxic effluent standard or prohibition.

G11. PLAN REVIEW REQUIRED

Prior to constructing or modifying any wastewater control facilities, detailed plans shall be submitted to Ecology for approval in accordance with Chapter 173-240 WAC. Facilities shall be constructed and operated in accordance with the approved plans.

G12. OTHER REQUIREMENTS OF 40 CFR

All other requirements of 40 CFR Parts 122.41 and 122.42 are incorporated in this permit by reference.

G13. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in this permit shall be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G14. ADDITIONAL MONITORING

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G15. REVOCATION FOR NON-PAYMENT OF FEES

Ecology may revoke this permit if the permit fees established under Chapter 173-224 WAC are not paid.

G16. REMOVED SUBSTANCES

Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment of wastewaters or control of wastewaters shall not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

G17. DUTY TO REAPPLY

The Permittee must reapply for a permit at least 180 days before the expiration date of this permit.

ATTACHMENT A

WEST COAST MARINE SPECIES
CHRONIC PROTOCOL VARIABILITY STUDY

Overview

This document outlines a scope of work for a study to determine the variability of chronic toxicity testing utilizing selected West Coast marine organisms ("Protocol Variability Study" or "Study"). The purpose of this study is to determine the precision of at least four marine chronic toxicity tests through "round robin" variability testing and to establish organisms for use in marine discharges in Washington State.

This Protocol Variability Study will determine the variability of chronic test results for at least four West Coast marine species including oyster larvae. The study shall attempt to quantify the amount of variability in the marine chronic tests, including:

* inter-laboratory variability;
* intra-laboratory variability; and
* seasonal variability.

This study will be funded by the undersigned companies who have NPDES permitted discharges in Washington State (the "Permittees"). At the conclusion of this study, the Permittees will conduct chronic toxicity testing using organisms approved by the Department of Ecology (the "Department") for use in Washington marine waters.

Biomonitoring Work Group

The Department will convene a work group to assist in the development and administrative implementation of the Protocol Variability Study. The work group will consist of participants from the Department, the U.S. Environmental Protection Agency (EPA), the Puget Sound Water Quality Authority, the Permittees, interested tribes and environmental organizations. Members of the work group should be technical representatives rather than advocates. The Department of Ecology contract officer responsible for this Study will be a member of

WEST COAST MARINE SPECIES
CHRONIC PROTOCOL VARIABILITY STUDY

SCHEDULE

August 1991 — Initiate process. Convene work group of all interests

September 1991 — Department selects Biomonitoring Science Advisory Board (BSAB) based on recommendations of work group

November 1991 — Develop workplan and contractor RFP

January 1992 — Contractor selection finalized

March 1992 — Contractor submits detailed design for "round-robin" variability study

* BSAB review and approval

May 1992 — Contractor initiates work

* One year study with monitoring timed to allow measurement of seasonal variability
* Quarterly progress reports made available to all when received
* QA/QC data made available to all when received

February 1993 — BSAB develops criteria for acceptable variability of marine chronic tests

May 1993 — BSAB makes recommendations and develops criteria for protocols with assistance of contractor

* Public review

July 1993 — Department selects organisms for use in marine discharges based on recommendations of BSAB

Note: Schedule is designed to complete precision testing of protocols in shortest time consistent with scientific integrity of process and full public participation. If deadlines can be tightened, BSAB should accelerate process.

the work group. Each member of the work group may designate an alternate or replacement for meetings of the work group. Members of the work group are selected based on their technical knowledge and interest in the issues of chronic biomonitoring. The work group will operate, to the extent possible, on consensus in developing any recommendations regarding implementation of the Protocol Variability Study.

Biomonitoring Science Advisory Board

The Protocol Variability Study will be performed under the direction of a Bioassay Science Advisory Board ("BSAB") which will be composed of a minimum of three and no more than five scientists with recognized experience in the field of chronic toxicity bioassays of marine organisms. The BSAB will be selected by the Department based on the recommendation of the work group. If the work group is unable to finalize a consensus recommendation, Ecology will select from a list of up to three names to be submitted by each work group member. The BSAB shall be separate from the work group.

The Department will compensate the members of the BSAB from Permittee funds for their time and reasonable expenses serving on the Board and directing the Protocol Variability Study. Should any member of the BSAB resign during the pendency of the Study, the Department will appoint a new member recommended by the remaining members of the BSAB after consultation with the work group.

Work Plan Development

Within three months after the date of this document, the BSAB, will develop a work plan for a protocol variability study ("Study Plan"). The Study Plan will be designed to determine and compare the variability of chronic testing utilizing selected West Coast marine organisms. The Study Plan will include a minimum of four West Coast marine organisms (including Pacific Oyster larvae) and a minimum of five laboratories. Effluents provided by the Permittees will be used in the Study Plan.

It is understood that these protocols will be for West Coast species that represent Washington species to the greatest degree practicable. The source for these protocols will be EPA, ASTM, the California Water Resources Control Board, or appropriate scientific publications. The ASTM protocol for toxicity testing with Pacific oyster larvae will automatically be one of

the tests evaluated, but will also be conducted based on experience gained with the test in places like California. The other tests will be chosen by the BSAB considering the need for tests using West Coast species that are readily available, reliable, and sensitive to toxicity. The tests chosen should cover the critical life stages of marine organisms and as many taxonomic groups as possible.

The work plan will include a minimum of two tests using the protocol for Pacific Oyster larvae, to be conducted on the effluent of each Permittee's mill which discharges to marine waters.

The efforts of U.S. EPA and others should not be duplicated if their work meets the criteria established by the board. If the BSAB concludes that no further precision testing is necessary or appropriate based on the review of available information, the BSAB may make final recommendations to Ecology and terminate the remainder of the study.

Contractor Selection

Within five months after the date of this document, the BSAB, in consultation with the work group, will solicit proposals from and select a contractor to coordinate the precision testing. The contractor will be primarily responsible for the detailed design and implementation of the Protocol Variability Study. The contractor will be responsible for ensuring consistent test methods and end points among the lab participants.

The contractor must be experienced with marine chronic toxicity test methods, especially for oyster larvae. During the Protocol Variability Study, the contractor will attempt to resolve any difficulties that the labs might have in performing the tests and achieving consistent results. The contractor will be responsible for ensuring that, as the Protocol Variability Study is conducted, all reasonable efforts are made to refine lab technique in order to achieve acceptable results for the toxicity test methods.

Detailed Design

Within seven months after the date of this document, the contractor will develop a detailed design for the Protocol Variability Study. This detailed design will include QA/QC and the method of analysis of the data.

This detailed design will provide for at least four rounds of comparative testing using selected species and using at least five selected laboratories.

Study Implementation

Within nine months of the date of this document, the contractor will begin sampling and analysis. Results of all sampling and analysis will be made available to the BSAB, work group, other agencies and interested members of the public after completion of QA/QC on the data. The contractor will provide quarterly status reports which will also be available to the public.

Criteria Development

Within eighteen months of the date of this document, the BSAB will develop a set of criteria for the acceptable variability of the marine chronic toxicity tests involved in this study. The performance of the freshwater chronic tests shall be a basis for comparison but should not be the sole basis for criteria selection. The EPA's "Technical Support Document for Water Quality-Based Toxics Control," March 1991 [EPA/505/2-90-001] at pp. A-1-7 through A-1-12 provides selected data describing the performance of freshwater chronic tests. These criteria will be used for evaluating the results of this study and may be used, if the Department chooses, to evaluate future toxicity test protocols such as those that will be established by the U.S. EPA.

Evaluation of Results and Criteria Development

No later than twenty-one months after the date of this document, the BSAB will evaluate the results of any precision testing undertaken as a part of this study and provide recommendations regarding tests that have scientifically acceptable variability for use in toxicity monitoring.

Seasonal availability of suitable test organisms also should be established, but limited availability should not, by itself, determine the acceptability of the test.

Selection of Protocols

No later than twenty-four months after the date of this document, the Department will select organisms for

chronic toxicity testing for marine dischargers based on the recommendations of the BSAB. Permittees will conduct chronic toxicity testing according to the terms of their permits.

Funding and Permittee Participation

The Permittees agree to fund the Protocol Variability Study up to a maximum of $700,000. Permittees agree to meet and confer with the Department if proposals from contractors would increase the total of all Protocol Variability Study costs to an amount in excess of $700,000. Costs eligible for funding include:

* Compensation for and expenses of the BSAB;
* Contractor compensation and expenses
* 1/4 of a full-time equivalent (FTE) in the Department to oversee study design and implementation.

Time Deadlines

The purpose of this document is to complete the Protocol Variability Study in the minimum amount of time. If time periods for any elements of this study may be shortened, or if the tasks outlined above may be combined or eliminated without sacrificing the scientific integrity or the public confidence in the Study, then action should be taken which reduces the length of the Study and results in quicker selection of approved protocols. The BSAB may request up to a six-month extension of any of the deadlines in this document, if the BSAB concludes that such extension is scientifically necessary. Any extension of deadlines must be approved by Ecology; the total of all extensions shall not exceed six months. Failure of the BSAB or others to meet any deadlines in this Agreement will not be considered violations of any permit or order by any Permittee so long as the Permittee is conducting interim chronic toxicity tests as required under its NPDES permit and has met all of its obligations under this document.

Retention of Rights

The Department retains all rights and authority delegated by law to require additional toxicity testing or to require actions based on such testing through administrative order or permit modification consistent with this study.